

different control modes according to the status of external conditions of said laser element, wherein each control mode is based on different control parameters representing external conditions detected by said control circuit that cause a wavelength variation, and

applying a control signal output from said selected control circuit to said laser element, thereby achieving stabilizing control of optical wavelength [in said selected] with the control mode of said selected control circuit.

REMARKS

In the present application;

Claims 17-28 are pending.

Claims 17-28 stand rejected.

Claims 17, 18, 21, 25 and 27 have been amended.

Claims 17-28 are hereby submitted for consideration.

No new matter has been added.

In paragraph 1 of the Office Action the Examiner has noted that the Information Disclosure Statement received on January 24, 2002 did not comply with the requirements of 37 CFR 1.97, 1.98 and MPEP § 609 because copies of the two foreign references were not provided. A Supplemental Information Disclosure Statement is filed herewith along with copies of the Search Report and English translations of the abstracts from the two foreign references.

In paragraph 2 of the Office Action the Examiner has rejected claims 17, 25 and 27 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the

subject matter which the applicant regards as the invention. Applicants have amended these claims to comply with the requirements of 35 U.S.C. § 112 and respectfully request that the rejection of these claims be withdrawn.

In paragraph 3 of the Office Action, the Examiner rejects claims 17-28 under 35 U.S.C. § 102 as being anticipated by Sato (U.S. Patent No. 5,511,087).

Applicants respectfully disagree with the Examiner's contentions and submit the following remarks in response.

Regarding claims 17, 25 and 27, the present invention as claimed is directed to an optical signal transmitter comprised of a laser diode for outputting an optical signal to be transmitted and a driving current source for driving the laser diode. A plurality of control circuits are provided, each configured to output a control signal for controlling the optical wavelength of the laser diode *in different control modes, where each control mode is based on different control parameters representing external conditions* detected by the control circuits that cause a wavelength variation.

A selector is arranged so as to select at least one of the control modes according to status of electrical signals representing the external conditions of the laser diode, and to apply a control signals output from the selected control circuit to the laser diode, thereby achieving stabilizing control of optical wavelength with the selected control mode.

Regarding claim 18, the present invention further comprises a parameter deviation detector and an optical wavelength deviation detector. Also, regarding claim 22, the present invention further comprises first and second controllers for stabilizing the optical wavelength of a laser diode and performing different types of control actions according to different types of

input signals.

In this configuration, the present invention can monitor different external conditions of a laser diode and issues control signals based on these different control parameters. A selecting means is provided that selects which of the control signals will be applied to the laser diode based on the selected control mode.

The cited prior art, namely Sato, is directed to a method and device for controlling a semiconductor laser. As stated in the abstract, Sato proposes a control method for a semiconductor laser for a reading control system such as “a bar code reader,” where the object of the invention is to control the “light amount” of the laser.

To this end, as illustrated in Fig. 1 of Sato, a feedback controller 13, using a first time constant, and a second feedback controller 14 using a second time constant are provided. The first controller 13 is used when the light amount is less than a predetermined value, and the second controller 14 is used when the amount of light increases over the predetermined value. See, Sato, column 12, lines 15-47. As described in this section, both feedback controllers 13 and 14 operate in the same control mode because they receive the same input signal, the light amount from the light amount monitoring means 12.

Contrary to the Examiner’s suggestion, there is no teaching or suggestion in the prior art which discloses the present invention as claimed. For example, there is no teaching or suggestion in Sato which discloses a plurality of control circuits each configured to output a control signal for controlling the optical wavelength of said laser diode *in different control modes, wherein each control mode is based on different control parameters representing external conditions* detected by said control circuits that cause a wavelength variation. As

discussed above, although the system disclosed in Sato utilizes two separate feedback controllers they clearly both operate using the same parameters, namely the light amount from the semiconductor laser. This is not analogous to the present invention which is capable of stabilizing the output of a laser diode utilizing different control parameters from various different external conditions. This allows greater versatility in stabilizing the output of the diode laser, not provided by the systems disclosed in the prior art.

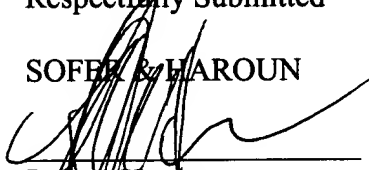
Therefore, in view of the above amendments and remarks, Applicants respectfully request that the rejection of independent claims 17, 18, 22, 25 and 27 under 35 U.S.C. § 102 be withdrawn. Additionally, as claims 19-21, 23-24, 26 and 28 are dependent therefrom, for the same reasons listed above, Applicants request that the 35 U.S.C. § 102 rejection of these claims be withdrawn as well.

Applicants respectfully submit that the present invention as claimed in the amended claims is now in condition for allowance, the earliest possible notice of which is earnestly solicited. If the Examiner feels that a telephone conversation would assist in the prosecution of this application he is directed to contact the undersigned at his convenience.

Respectfully Submitted

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